

WHAT IS CLAIMED IS:

1 1. (Original) A spacerless or geocomposite double bottom apparatus for a storage
2 tank having a metal bottom and upwardly extending metal sidewalls, which apparatus
3 comprises:

4 a first lining layer of flexible plastic on top of said metal bottom;
5 a plastic grid having a plurality of openings therethrough on top of said first
6 lining layer;
7 at least one layer of fiber insulation on top of said grid; and
8 an upper metal bottom on top of said fiber material welded to said sidewalls.

1 2. (Original) A double bottom apparatus as set forth in Claim 1 wherein said
2 first lining layer is a high density polyethylene sheet.

1 3. (Original) A double bottom apparatus as set forth in Claim 1 wherein said
2 plastic grid is composed of high density polyethylene.

1 4. (Original) A double bottom apparatus as set forth in Claim 1 wherein said
2 fiber insulation is mechanically bonded mineral or glass wool.

1 5. (Original) A double bottom apparatus as set forth in Claim 4 including two
2 layers of said mechanically bonded mineral or glass wool.

3 6. (Original) A double bottom apparatus as set forth in Claim 1 wherein said
4 upper bottom extends through slots in said sidewalls and is welded thereto by welding to a
5 flat bar extending from said sidewalls.

1 7. (Original) A double bottom apparatus as set forth in Claim 6 wherein all
2 welds are made from above said upper bottom.

1 8. (Original) A double bottom apparatus as set forth in Claim 1 including a leak
2 detection port through said sidewalls between said original bottom and said upper bottom.

1 9. (Original) A double bottom apparatus as set forth in Claim 7 wherein said
2 leak detection port includes a clear cylindrical tube so that fluid therein is visible.

1 10. (Original) A double bottom apparatus as set forth in Claim 1 wherein a fluid
2 tight containment space is created between said upper bottom, said sidewalls, and said first
3 lining layer.

1 11. (Original) A double bottom apparatus as set forth in Claim 10 wherein said
2 fluid tight containment space is purged of oxygen.

1 12. (Original) A double bottom apparatus as set forth in Claim 11 wherein said
2 lining layer is fastened to said metal bottom by a plurality of fasteners.

1 13. (Original) A double bottom apparatus for a storage tank as set forth in Claim
2 1 including a sealant between said first lining and said sidewalls.

1 14. (Withdrawn) A method of installing a spacerless double bottom for a storage
2 tank having a metal bottom and upwardly extending sidewalls, which method comprises the
3 steps of:

4 installing a first lining layer of flexible plastic on top of said metal bottom;
5 installing a plastic grid having a plurality of openings therethrough on top of
6 said lining layer;
7 installing at least one layer of fiber insulation on top of said grid; and
8 installing a new upper metal bottom above said natural fiber material.

1 15. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 14 including the additional step of affixing said lining layer to said metal
3 bottom.

1 16. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 14 wherein said step of installing at least one layer of fiber insulation
3 includes installing two layers of said fiber insulation.

1 17. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 14 wherein said step of installing a new upper metal bottom includes the
3 steps of cutting a plurality of openings through said sidewalls, inserting a plurality of flat

4 plates in said tank and through said sidewalls, and welding said flat plates to said sidewalls.

1 18. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 17 wherein all welding is performed from above said flat plates.

1 19. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 14 wherein said flat plates are welded to flat bars previously welded and
3 extending from said sidewalls.

1 20. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 14 wherein said lining layer, said sidewalls and said upper bottom form a
3 fluid-tight secondary container and including the additional step of purging said container of
4 oxygen.

1 21. (Withdrawn) A method of installing a spacerless double bottom apparatus as
2 set forth in Claim 14 including the additional step of installing a leak detection port
3 through said sidewalls.